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The triviality argument against presentism

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Abstract *Presentism* is typically characterised as the thesis that *everything (unrestrictedly) is present*, and therefore there are (quantifying unrestrictedly) no dinosaurs or Martian presidential inaugurations. Putting aside the vexed question of exactly what it is to be *present* in this context (see Williamson in Modal logic as metaphysics, Oxford University Press, Oxford, 2013; Cameron in Anal Philos 57:110–140, 2016; Deasy in Noûs 51:378–397, 2017), this thesis seems quite straightforward. However, a number of authors—such as Merricks (Mind 104:521–531, 1995), Lombard (Philosophia 27:253–260, 1999), Meyer (New papers on the present, Philosophia Verlag, Munich, pp 67–90, 2012), Tallant (Erkenntnis 79:479–501, 2014) and Sakon (Philosophia 43:1089–1109, 2015)—have argued that Presentism so characterised is either trivially true or false even by Presentist lights. This is the so-called *Triviality Argument* against Presentism. In this paper I show that three of the four premises of the Triviality Argument are plausibly false. I conclude that Presentists have nothing to fear from the Triviality Argument.

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1 Presentism and triviality

According to *Presentism*, reality does not extend beyond the present moment, and therefore there are no (wholly) non-present objects or events: no Xanthippe, no World War II, no first President of Mars, no first Martian presidential inauguration. A little more carefully, Presentism is typically defined as the thesis *that everything is present*:

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> PRESENTISM: Everything is present

Call this the *standard definition* of Presentism. For example, here is Meyer (2005, p. 213):

> Presentism, we are told by its advocates, is the following thesis about the relation between time and existence:
> P: Nothing exists that is not present

And here is Crisp (2003, p. 215):

> For the purposes of this chapter, then, let us think of presentism as the following thesis:
> Presentism: It is always the case that, for every x, x is present.

The standard definition of Presentism immediately raises a number of questions, in particular concerning (i) the temporal and modal force of the thesis; (ii) the scope of the quantifier; (iii) and what exactly it is to be 'present' in the relevant sense. As for the first two questions, in order to make progress I assume (i) that Presentism is if true always true (leaving the modal question unsettled)[1]; and (ii) that the quantifier is wholly unrestricted (so that abstract objects, if there are any, are present if Presentism is true).[2]

As for the third question, there has been very little agreement among Presentists concerning the correct answer. Some candidate answers include: to be present is *to be something*; to be present is *to exist now*[3]; to be present is *not to have any temporal distance from events that are occurring now*[4]; to be present is *to be located at the present instant if any*[5]; presentness is a primitive property.[6] I have argued elsewhere that there are good reasons for Presentists to resist each of these answers.[7] I would argue, then, that Presentism as standardly defined remains somewhat mysterious. However, many Presentists either accept one of the above candidate definitions of 'is present', or are content to treat the predicate as a primitive.[8]

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[1] Crisp (2003) defends this reading.

[2] Crisp (2004) defends this reading.

[3] See Zimmerman (1996). Note that 'x exists now' in this context should *not* be read as equivalent to 'x is located at this instant', but to 'now, x is something'.

[4] See Crisp (2003).

[5] See Cameron (2016).

[6] See Zimmerman (1996).

[7] See Deasy (2017).

[8] Some theorists argue that while Presentism is often presented as the simple universal claim that everything is present, in fact it should be read in some other, quite different way. For example, Stoneham (2009) argues that Presentism should be understood as a claim about 'truthmakers'; Tallant (2014) argues that Presentism should be understood as a statement of property identity; and Sakon (2015) argues that Presentism should be treated as a claim about propositions. Finally, Deasy (2017) argues that Presentism should be understood as a claim concerning the temporariness of existence, to the effect that *sometimes, something was nothing and sometimes, something will be nothing*. (In fact, most Presentists defend the stronger thesis that *many things*—such as molecules, mountains, and stars—both begin and cease to exist over time.) However, note that with the exception of Deasy (2017), these theorists are motivated to redefine Presentism by the Triviality Argument.

As standardly defined, Presentism is to be understood as the thesis that always, everything (unrestrictedly) is present. Putting aside the question of what it is to be 'present' in this context, this seems quite straightforward. However, a number of authors have argued that given the standard definition, Presentism is either trivially true or false even by Presentist lights. Early versions of this objection are raised by Merricks (1995, pp. 523–524) and Lombard (1999). Following Crisp (2004), let us call this objection to Presentism as standardly defined the *Triviality Argument*, and authors who raise the objection *Trivialists*. Here is a slightly modified version of Sakon's (2015, p. 2) recent statement of the argument:[9]

(1) The standard definition of Presentism—that everything is present—is equivalent to the thesis that everything *that exists* is present

(2) The sentence 'Everything that exists is present' must be read as expressing either the proposition *that everything that exists now is present* or the proposition *that everything that did, does now, or will exist is present*

(3) The proposition *that everything that exists now is present* is trivially true—in particular, it is true according to (non-Presentist) *Eternalists*, according to whom there are (wholly) past and future things[10]

(4) The proposition *that everything that did, does now, or will exist is present* is false by Presentist lights—for example, according to Presentists, Xanthippe *did exist*, but she is not present

(c) Presentism as standardly defined is either trivially true or false by Presentist lights

In what follows, I defend Presentism against the Triviality Argument. I proceed as follows: in Sect. 2 I argue that premise (2) of the Triviality Argument is false. In Sect. 3 I argue that premise (3) of the Triviality Argument is false. In Sect. 4 I argue that premise (4) of the Triviality Argument is false. I conclude that Presentists have nothing to fear from the Triviality Argument.[11]

2 Tense and triviality

Consider premise (2) of the Triviality Argument:

> (2) The sentence 'Everything that exists is present' must be read as expressing either the proposition *that everything that exists now is present* or the proposition *that everything that did, does now, or will exist is present*

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[9] Something like this argument is endorsed by Merricks (1995), Lombard (1999), Stoneham (2009), Meyer (2012), Tallant (2014) and Sakon (2015). I have also seen the argument endorsed by philosophers in other contexts. Responses to the argument can be found in Ludlow (2004, pp. 33–36), Sider (2006) and Szabó (2006, pp. 399–400). Sider (2006) describes a closely related argument to the effect that the dispute between Presentists and Eternalists is 'merely verbal'. I do not explicitly consider that argument here, but some of the discussion in what follows is relevant.

[10] Eternalists include *B-theorists* such as Sider (2001) and Skow (2015) and *Moving Spotlighters* such as Deasy (2015) and Cameron (2016).

[11] There is a further response to the argument that I do not consider here, due to Cameron (2016). Cameron (2016, pp. 137–138) argues that Presentists can accept the conclusion of the Triviality Argument on the grounds that even if it is trivial that everything is present given the Presentist interpretation of 'is present', it is *not* trivial that the Presentist interpretation of 'is present' is the correct one.

Why believe this? Trivialists such as Stoneham (2009), Meyer (2012), Tallant (2014) and Sakon (2015) seem to base their acceptance of premise (2) on the thesis that Ludlow (2004, p. 30) calls 'Very Serious Tensism', and that I shall call *Tensed Verbs*:

TENSED VERBS: Every natural language English verb is inherently tensed

For example, here is Stoneham (2009, pp. 202–203):

The problem [with the standard definition] is that the English verbs 'to exist' and 'to be' must always be tensed: we cannot say that something exists without saying more specifically that it does, has or will exist.

Similarly, here is Meyer (2012, p. 2):

It is a feature of English syntax that we cannot attribute existence to an object without committing ourselves, by our choice of tense for the verb *to exist*, to a past, present or future time at which the object exists.

The reasoning from Tensed Verbs to premise (2) is (plausibly) as follows: Presentism is standardly defined as the thesis that everything is present, which is logically equivalent to the thesis that everything that exists is present. However, given Tensed Verbs, the natural language (English) verb 'to exist' in the sentence 'Everything that exists is present' must be either past, present, or future tensed—in which case, the standard definition must be read as expressing one of the following propositions:[12]

(P1) Everything that exists now is present
(P2) Everything that did, does now, or will exist is present

But why should Presentists accept Tensed Verbs? Neither Ludlow (2004), Stoneham (2009), Meyer (2012), Tallant (2014) nor Sakon (2015) cites any evidence in its support.[13] However, there is some compelling linguistic evidence *against* the thesis. For example, Szabó writes (2006, n. 4):

The claim that predication in English is inherently tensed is in any case exceedingly implausible. Consider the sentence 'Jack considers Jill fortunate'. According to plausible syntactic views the compliment of 'considers' in this sentence is a so-called small clause—'Jill fortunate'. This clause is not tensed. Assuming competent speakers understand this sentence by understanding its syntactic constituents and the way those constituents are combined, we have evidence that tenseless predication is meaningful.

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[12] It also follows from Tensed Verbs that the verb 'to be present' in the sentence 'Everything that exists is present' must be either past, present, or future tensed. This generates further readings of the target sentence—see in particular Mozersky (2011)—but does not by itself undermine the Triviality Argument. In what follows, unless stated otherwise I assume that the predicate 'is present' is *present tensed*.

[13] As far as I am aware, Tensed Verbs receives no explicit support from the relevant linguistics literature. However, there are some arguments that may provide evidence *against* the thesis. For example, Sauerland (2002) argues that the present tense is vacuous, on the grounds that if the present tense in a sentence s refers to (or refers to an interval which overlaps) the instant of utterance of s, one cannot account for the felicity conditions of sentences such as 'Every Monday this month, I fast'. I am grateful to Paul Elbourne for drawing my attention to this point.

Here is a similar example:[14] consider the sentence

(1) Amara is afraid lest she make a bad impression

The compliment of 'lest' in (1) is the clause 'she make a bad impression'. But this clause is clearly not tensed, and if we assume that speakers understand this sentence by understanding its syntactic constituents and how they are combined, we have further linguistic evidence that there are tenseless verb-forms in natural language English. Finally, Zimmerman (2005, pp. 407–409) provides the following examples of plausibly natural language English sentences featuring tenseless verb-forms:[15]

(2) I <u>am</u> in New Jersey on January 12 2004[16]
(3) The Beloved Apostle <u>takes</u> his final breath on the island of Patmos[17]
(4) Liz <u>smokes</u>

And it is easy to think of further examples, such as:

(5) Two plus two <u>equals</u> four
(6) The total energy of an isolated system <u>is</u> constant
(7) There <u>is</u> a counterpart of Trump who lost the election

If Tensed Verbs is false, Presentists can resist the argument for premise (2) of the Triviality Argument by arguing that the natural language English verb 'to exist' in the standard definition is *tenseless*—in which case, the standard definition should be read as expressing the proposition *that everything that <u>exists</u> is present*, which is neither trivial nor false by Presentist lights.

A Trivialist could respond to this argument as follows: even if the verb 'to exist' in the standard definition is tenseless, it does not follow that the standard definition should be read as expressing the proposition *that everything that <u>exists</u> is present*. The reason is that the standard definition is a sentence of natural language English, and it is not possible to express 'tenseless' properties—e.g. the property of <u>existing</u>—using natural language English verbs (whether they are tensed or tenseless). Call this thesis *Tenseless Properties*:

> TENSELESS PROPERTIES: It is not possible to express 'tenseless' properties in natural language English

A commitment to something like Tenseless Properties can be detected in Stoneham's (2009, p. 206) response to Szabó's argument:

> This sort of argument can show at most that there are allowable syntactic forms which contain no tense markers. It does not follow that these express tenseless predication and we can see in the particular case Szabó offers that his sentence can be paraphrased without loss as the clearly tensed 'Jack considers Jill to be fortunate'.

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[14] Thank you to Paul Elbourne for suggesting this example to me.

[15] From now on, where it is useful to do so I adopt Szabó's practice of <u>underlining</u> allegedly tenseless verbs.

[16] Imagine this sentence being uttered in the context of discussing one's travel plans.

[17] Imagine this sentence being uttered as part of a speech concerning the lives of religious figures.

How should Presentists respond to this argument? One option is to simply reject Tenseless Properties. After all, neither Stoneham nor any other Trivialist explicitly defends the thesis—and there is no obvious reason to accept it. Moreover, there are good arguments against the thesis (even if they are not the sort of arguments that would move a proponent of the thesis[18]). For example, it seems plausible that when a schoolchild utters sentence (5) above they neither cease to speak English nor express the proposition *that two plus two (always) did, does now, and (always) will equal four*. Rather, they use a sentence of English to express the proposition *that two plus two equals four*. It follows that Tenseless Properties is false. Similarly, it seems plausible that when a physicist utters sentence (6) above they neither cease to speak English nor express the proposition *that the total energy of an isolated system is now, (always) was, and (always) will be constant*. Rather, they use a sentence of English to express the proposition *that the total energy of an isolated system is̲constant*. Again, it follows that Tenseless Properties is false.

Another way for Presentists to respond to this argument is to reject the premise that the standard definition is a sentence of natural language English. In particular, Presentists could argue that the standard definition is a sentence of *English**, where English* extends natural language English by the addition of the non-natural tenseless verb 'exists' (which expresses the 'tenseless' property of existing). Moreover, notice that this response also works as a response to the original argument for premise (2) from Tensed Verbs: if the verb 'exists' in the standard definition is not a natural language English verb, then Tensed Verbs—even if true—does not apply, and the standard definition can be read as expressing the proposition *that everything that exists̲ is present*.

We have seen two ways Presentists can resist the argument for premise (2) of the Triviality Argument: they can reject Tensed Verbs and Tenseless Properties, and argue that the standard definition is a sentence of natural language English; or, they can accept either Tensed Verbs or Tenseless Properties, and argue that the standard definition is a sentence of the non-natural language English*.[19] I think that Presentists should prefer the first option, because there are good reasons to reject both Tensed Verbs and Tenseless Properties (as we have seen). However, either way, Presentists can argue that the standard definition expresses neither (P1) nor (P2), but rather the non-trivial truth *that everything that exists̲ is present*.[20]

Whichever option Presentists prefer, Trivialists are likely to respond with the following question: how are we supposed to understand the 'tenseless' notion of *existence*—i.e. the notion of *existence̲*—allegedly employed in the standard definition? A natural response to this question is to appeal to the quantifiers of standard first-order predicate logic (just 'predicate logic' from now on), as follows:[21] for some

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[18] Such arguments can be thought of as providing a 'path to knowledge' for those who are open to accepting their premises. Thank you John Hawthorne for this idea.

[19] A third option is to reject Tensed Verbs and Tenseless Properties *and* argue that the standard definition is a sentence of English*.

[20] Note that Presentists can still accept that the verb 'to be present' in the standard definition is present-tensed—the sentence 'Everything that exists̲ *is now* present' is neither trivial nor false by Presentist lights.

[21] Sider (2006) and Szabó (2006) recommend this response to Presentists.

x to _exist_ is just for there to be some y which is identical to x, where the quantifier in the sentence 'There is some y identical with x' is to be read as equivalent to the existential quantifier ('∃') of predicate logic. It follows that the sentence 'Everything that exists is present' should be read as equivalent to the sentence

(8) $\forall x(\exists y\, y = x \supset \text{Present}(x))$

And it is clear that _this_ sentence expresses neither (P1) nor (P2), as the quantifiers of predicate logic do not convey the relevant temporal information (i.e. they are tenseless). After all, if they did, the sentence

(9) $P\exists x \text{Dodo}(x)$

would have to be read as expressing either the proposition _that it was the case that there is now an x such that x is a dodo_, or the proposition _that it was the case that there was, is now, or will be an x such that x is a dodo_. But it is clear that neither reading is correct: (9) simply expresses the proposition _that it was the case that for some x, x is a dodo_. (As Rini and Creswell (2012, p. 65) point out—following Barcan Marcus (1962)—it would be a mistake to think of the quantifiers of predicate logic as _verbs_. They can be read _as if_ they are verbs, as when (9) is read as equivalent to 'It was the case that there _exists_ an x such that x is a dodo'—but they can also be read simply as quantifiers, as when (9) is read as equivalent to 'It was the case that, for some x: x is a dodo'. It is plausibly the former sort of reading that encourages the mistaken idea that quantifiers must carry tense.)

The claim that the standard definition should be read as equivalent to (8) seems to provide Presentists with a straightforward response to the question of how we ought to understand the notion of _existence_ employed in the standard definition. However, both Meyer (2012, pp. 3–4) and Stoneham (2009, pp. 208–210) have raised objections to this response. Let us consider each of these in turn. (Meyer's argument has as a target the claim that the standard definition should be read as expressing the proposition _that everything that exists is present_, but I take it that this includes Presentists who hold that the standard definition should be read as equivalent to sentence (8).)

Meyer's argument is as follows:[22] suppose the standard definition is read as equivalent to sentence (8):

(8) $\forall x(\exists y\, y = x \supset \text{Present}(x))$

Given that if everything is F then everything that is G is F (formally: $\forall xFx \supset \forall x(Gx \supset Fx)$), (8) implies

(10) $\forall x((P\exists y\, y = x \lor N\exists y\, y = x \lor F\exists y\, y = x) \supset \text{Present}(x))$

Now suppose that Presentists accept _Temporal Existence_, the thesis that everything sometimes exists:

TEMPORAL EXISTENCE: $\forall x S\exists y\, y = x$

Given that what is _sometimes_ the case _was, is now, or will be_ the case (formally: $S\varphi \leftrightarrow P\varphi \lor N\varphi \lor F\varphi$), Temporal Existence is equivalent to

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[22] This argument is anticipated by Crisp (2004, p. 17). My presentation of the argument differs substantially from Meyer's, but I take it to be essentially the same.

(11) $\forall x (\text{P}\exists y\, y = x \lor \text{N}\exists y\, y = x \lor \text{F}\exists y\, y = x)$

However, (10) and (11) jointly imply (8). Given as we saw above that (8) implies (10), it follows that given Temporal Existence, (8) is *equivalent to* (10):

(12) $\forall x (\exists y\, y = x \supset \text{Present}(x)) \leftrightarrow \forall x ((\text{P}\exists y\, y = x \lor \text{N}\exists y\, y = x \lor \text{F}\exists y\, y = x) \supset \text{Present}(x))$

In other words, given Temporal Existence, the standard definition is equivalent to the thesis that everything that did, does now, or will <u>exist</u> is present—i.e. to (10). However, (10) is the most natural formalization of (P2):

(P2) Everything that did, does now, or will exist is present

And according to premise (4) of the Triviality Argument, (P2) is false even by Presentist lights. So the claim that the standard definition should be read as equivalent to (8) does nothing to help Presentists avoid at least one horn of the Triviality Argument, namely, that their thesis is false by their own lights.

How should Presentists respond to this argument? Some Presentists might be tempted to reject Temporal Existence on the grounds that there are abstract objects—perhaps numbers, sets, or universals—which 'exist outside of time'. However, there are better ways to capture the idea that abstract objects exist outside of time. For example, abstract objects (necessarily) have no spatiotemporal location. But having no spatiotemporal location is consistent with e.g. existing *now* (where 'x exists now' means that it is now the case that x is something), because existing now does not imply having a spatiotemporal location; for example, that Xanthippe's singleton set exists now does not imply that Xanthippe's singleton set is located at this instant (even B-theorists should reject this implication, as we shall see in Sect. 3 below). And given that if something doesn't sometimes exist it *never* exists, rejecting Temporal Existence comes at the steep cost of accepting that e.g. abstract objects *never exist*, and—if we accept that what must be the case is always the case[23]—*don't necessarily exist*.

A better response to the argument is to accept Temporal Existence, and therefore accept that Presentism as standardly defined is equivalent to (P2), but to deny that (P2) is false by Presentist lights. I argue that (P2) is *not* false by Presentist lights in Sect. 4 below.

Let us now turn to Stoneham's argument. The argument is as follows: Presentists might try to answer the question of how we can understand the tensed notion of <u>existence</u> employed in the standard definition by arguing that the quantifiers in the standard definition should be read as equivalent to the quantifiers of predicate logic. However, in order to understand the quantifiers of predicate logic, we have to understand the *semantics* of predicate logic. The semantics of predicate logic utilises two essential elements:

(S) A *structure S* comprising an ordered pair $\langle D, I \rangle$ where D is some non-empty set and I is a function from the set of all constants, sentence letters, and predicate letters, such that the value of every constant is an element of D; the value of every sentence letter is a truth value T or F; and the value of every n-ary predicate letter is an n-ary relation

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[23] See e.g. Dorr and Goodman (Forthcoming) for a defence of this thesis.

(V) A *variable assignment* a over S which assigns a member of the domain Ds of S to each variable. Given a structure S and variable assignment a over S, the quantifiers can be given the standard semantic clauses:

$|\exists v\varphi|_S^a = T$ if and only if $|\varphi|_S^b = T$ for at least one variable assignment b over S differing from a in v at most

$|\forall v\varphi|_S^a = T$ if and only if $|\varphi|_S^b = T$ for all variable assignments b over S differing from a in v at most

The key point is this: when the quantifiers are taken to be *unrestricted*—as in the standard definition—the domain D in S is understood to contain *everything*, or equivalently, *everything that exists*. But the characterization of D as the set of everything that exists is made in the meta-language—in this case, natural language English (or some non-natural extension of English). It follows that unless it is possible to express the 'tenseless' property of existing (or being something) *in the metalanguage*, the claim that D contains everything that exists must be read either as the claim that D contains everything that *exists now*, or that D contains everything that *did, does now, or will exist*; and therefore sentence (8) must be read either as expressing either (P1) or (P2).

How should Presentists respond to this argument? It is important to be aware of the nature of the dialectic here. The Trivialist poses the following question to Presentists: how are we supposed to understand the notion of _existence_ allegedly employed in the standard definition? The Presentist responds that given that the quantifiers of predicate logic are tenseless, we can understand the notion of existence employed in the standard definition by taking the definition to employ the quantifiers of predicate logic. What Stoneham's argument shows is that if the quantifiers of predicate logic are tenseless, the metalanguage in which the semantics of those quantifiers is given must itself contain the resources for expressing the notion of existence; and therefore the ultimate source of our understanding of the notion of _existence_ cannot be our understanding of the quantifiers of predicate logic.

Presentists should respond to this argument by pointing out that when they argue that we can understand the notion of existence employed in the standard definition by taking that definition to employ the quantifiers of predicate logic, they are *not* trying to describe the ultimate source of our understanding of the notion of _existence_. Rather, they are simply pointing out that *given that the quantifiers of predicate logic are tenseless*, they provide a natural way to understand the notion of _existence_. Now, if Stoneham is right, the metalanguage in which the semantics of the quantifiers of predicate logic is given must itself contain the resources for expressing the notion of existence if those quantifiers are tenseless. But Presentists can respond that this simply provides us with evidence that the metalanguage in which the semantics of the quantifiers is given—whether it is natural language English or some non-natural extension of English, such as English*—contains the resources for expressing the notion of existence. After all, if the metalanguage does *not* contain such resources, the quantifiers of predicate logic are tensed—and that is clearly false, as we saw above. (Of course, as with the arguments against Tenseless Properties above, this argument is not going to move Trivialists such as Stoneham who are happy to accept that the

quantifiers of predicate logic are tensed.[24] However, it is not unusual to reach such 'dialectical stand-offs' in philosophical debates; at such points, one simply has to make a judgement. And it is clear that Presentists should judge that the quantifiers of predicate logic are tenseless.)

Moreover, notice that we have been assuming with Stoneham that the semantics for predicate logic must be given in either natural language English or English*. And as a matter of fact, the semantics for predicate logic *is* often given in English or English*, because many philosophy and logic publications happen to be written in English or English*. But of course, it is perfectly possible to give the semantics for predicate logic in other natural (or non-natural) languages. And unless the relevant analogues of Tenseless Properties are true of *all* natural and non-natural languages, there are languages with the resources to express the notion of _existence_, and therefore to provide a semantics for the quantifiers of predicate logic on which they are tenseless. For example, in Mandarin Chinese all verbs are tenseless, in the sense that the verb-form remains the same no matter whether the relevant state of affairs occurs before, after, or simultaneous with the time of utterance. Rather, the time of occurrence of the state of affairs is typically indicated by an explicit temporal adverb ('now', 'yesterday', 'next week') or is determined by context.[25] Therefore, the Mandarin Chinese analogue of Tensed Verbs is false; and unless the Mandarin Chinese analogue of Tenseless Properties is true, it should be possible to provide a semantics for the quantifiers of predicate logic on which the domain D in S is specified as containing *everything that exists*. Indeed, if the Mandarin Chinese analogue of Tenseless Properties is false, Presentists could simply bypass the appeal to the quantifiers of predicate logic in their response to the Trivialist's question, and specify that the sense of 'exists' employed in the standard definition is exactly the notion of _existence_ expressed by the relevant expression of Mandarin Chinese. (And of course, the semantics for Mandarin Chinese is not given in natural language English!)

The above point reveals something important about the Triviality Argument, and in particular, about the Trivialists' defence of premise (2). What Trivialists require in order to defend that premise is not merely Tensed Verbs or Tenseless Properties, but the stronger thesis that it is not possible to express 'tenseless' properties *in any natural language* (I assume that all *non*-natural languages require interpretation in some natural language). But Presentists have been given no reason for accepting *this* premise—and as we have seen, there is a very good reason to reject it, if it implies that the quantifiers of predicate logic are tensed.

3 Tense operators and the B-theory

We saw above that Presentists can resist premise (2) of the Triviality Argument by arguing that the standard definition should be read as equivalent to the sentence

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[24] Stoneham (2009, p. 210) writes: 'The problem is that first-order formal languages give us the means for *syntactically* tenseless predication [and quantification], but it does not follow that we have *semantic* tenselessness'.

[25] See, for example, Liu (2015). I am very grateful to an anonymous referee for drawing my attention to the significance of tenseless languages to the debate concerning premise (2).

(8) $\forall x (\exists y\, y = x \supset \text{Present}(x))$

But suppose premise (2) is true, so that the standard definition must be read as expressing one of the following propositions:

(P1) Everything that exists now is present
(P2) Everything that did, does now, or will exist is present

According to premise (3) of the Triviality Argument, (P1) is trivial. But why believe this? Here is Meyer (2012, p. 2):

> This thesis [(P1)] is true, but trivial. Since being present and existing now amount to the same thing, P1 merely notes that everything that exists now, exists now. Everybody has to accept this view, irrespective of their views about the metaphysics of time.

And here is Tallant (2014, p. 478):

> P1 is trivially true. Of course nothing exists *now* that is not present. No-one denies this. Even Eternalists endorse P1.

The argument here seems to be as follows: 'exists now' and 'is present' mean the same thing, and therefore (P1)—the sentence 'Everything that exists now is present'—is true *given any theory of time*, including obviously non-Presentist theories such as Eternalism. In that sense, (P1) is trivial.

The first point to note concerning this argument is that neither Presentists nor Trivialists should accept the claim that 'exists now' and 'is present' *mean the same thing*, as the expressions behave differently when embedded within the scope of temporal operators. Consider, for example, the sentences

(1) It was the case that Xanthippe is present
(2) It was the case that Xanthippe exists now

On the most natural readings of (1) and (2), most Presentists and non-Presentists will count (1) as true and (2) as false.[26] However, all that Trivialists need in order to argue for the triviality of (P1) is the weaker claim that 'exists now' and 'is present' *are co-extensive when unembedded*. And given Presentism, it is natural to treat the predicates 'exists now' and 'is present' as expressing the same property when unembedded—perhaps the property of simply *being something*.[27]

Suppose, however, that one is an Eternalist *B-theorist*, according to whom reality contains a four-dimensional spacetime manifold and there is nothing metaphysically special about the present instant in virtue of which it is present.[28] On this view, the unembedded predicate 'is present' is naturally taken to express the property of *being located at this instant*, so that the sentence

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[26] Those who accept the temporal analogue of Williamson's (2002, 2013) theory of modality may accept (2).

[27] See e.g. Zimmerman (1996).

[28] See especially Sider (2001). It is natural for B-theorists to identify *instants of time* with maximal simultaneity-slices of the manifold. Of course, given STR it follows that there are no instants *simpliciter*, only instants *relative to a frame*. However, for ease of exposition I will omit reference to frames in what follows.

(3) $\exists x\, \text{Dinosaur}(x) \wedge \text{Present}(x)$
(Informally: Some dinosaur is present)

means the same as

(4) $\exists x(\text{Dinosaur}(x) \wedge \text{Located}(x, \text{now}))$
(Informally: Some dinosaur is located at this instant)

What about the predicate 'exists now'? Consider the sentence

(5) $\exists x(\text{Dinosaur}(x) \wedge \text{N}(\exists y\, y = x))$
(Informally: Some dinosaur exists now)

It is natural for a B-theorist to treat sentence (5) as equivalent to sentence (4), and therefore to sentence (3). The typical grounds for doing so are that given the B-theory, tense operators such as 'N' ('it is now the case that'), 'P' ('it was the case that') and 'F' ('it will be the case that') are implicit quantifiers over instants of time which function to restrict the quantifiers in their scope to individuals located at the relevant instant.[29] Call this thesis *Locator*:

> LOCATOR: The standard temporal operators ('N', 'P', 'F' etc.) are implicit quantifiers over instants of time which restrict the explicit individual quantifiers ($\forall$, $\exists$) in their scope to things located at the relevant instant

It is very natural to think that the B-theory should be combined with Locator. However, Locator causes trouble for B-theorists when combined with other natural B-theoretic commitments.[30] For instance, consider the sentence

(6) There are many instants of time

This sentence is surely true given the B-theory. However, given the basic temporal-logical principle that what is the case is sometimes the case ($\varphi \supset \text{S}\varphi$)—call this principle *Sometimes*—(6) implies

(7) Sometimes, there are many instants of time

which given Locator means the same as the contradictory

(8) There is an instant of time at which there are many instants of time

Call this problem for B-theorists the *Locator Puzzle*. There are a number of ways B-theorists can respond to the Locator Puzzle. For example, they can (i) argue that (6) is actually false given the B-theory; (ii) argue that (6) is true given the B-theory *only when read as a sentence of some non-natural extension of English*, and moreover

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[29] Taking 'P' and 'F' as primitive, we can define the further tense operators 'H' ('it always has been the case that'), 'G' ('it always will be the case that'), 'A' ('it is always the case that') and 'S' ('it is sometimes the case that') as follows: $\text{H}\varphi =_{(def)} \neg\text{P}\neg\varphi$; $\text{G}\varphi =_{(def)} \neg\text{F}\neg\varphi$; $\text{A}\varphi =_{(def)} \text{H}\varphi \wedge \varphi \wedge \text{G}\varphi$; $\text{S}\varphi =_{(def)} \text{P}\varphi \vee \varphi \vee \text{F}\varphi$.

[30] It is well known that the modal analogue of Locator—the principle that the standard modal operators '$\Box$' ('it is necessarily the case that') and '$\Diamond$' ('it could be the case that') are implicit quantifiers over possible worlds which restrict the explicit individual quantifiers within their scope to things located at the relevant worlds—causes trouble for Modal Realists when combined with other natural Modal Realist commitments, such as the modal-logical axiom T ($\varphi \supset \Diamond\varphi$) and the claim that there are many possible worlds. See for example Divers (2002, 2014), Parsons (2012), Williamson (2013, pp. 16–17), and Noonan (2014).

that sentences of *this* language are not valid substitution instances of Sometimes; (iii) argue that (6) expresses an 'atemporal' truth, and that sentences that express atemporal truths are not valid substitution instances of Sometimes; or (iv) defend some revised version of Locator on which (7) does not imply (8).[31] Each of these strategies come with its own costs and complications.[32] A particularly attractive alternative strategy, however, is to hold that given the B-theory, tense operators *have no restricting effect at all*—and are therefore redundant—when the sentences within their scope are 'purely qualitative' (i.e. entirely free of 'singular' or 'directly referential' material such as names, demonstratives, indexicals, personal pronouns, and free variables). Call this thesis *Redundancy*:[33]

> REDUNDANCY: For any purely qualitative sentence φ: Pφ, Fφ and Nφ are equivalent to φ

B-theorists who reject Locator in favour of Redundancy have an attractively simple solution to the Locator Puzzle: given Sometimes, (6) implies (7), but (7) does not imply (8)—rather, (7) is logically equivalent to (6). (And, returning to our earlier example, given Redundancy (5) is not equivalent to sentence (4), but to the sentence 'Some dinosaur exists'—$\exists x$ Dinosaur(x).)

Of course, this strategy also has its costs. For instance, the B-theory is typically taken to imply that there are dinosaurs located at past instants, and therefore that there are dinosaurs (see Sider 2006). It follows that given Redundancy, the B-theory implies:

> (9) A$\exists x$ Dinosaur(x)
> *(Informally: there are always dinosaurs)*

Some might object that sentence (9) conflicts with 'temporal common sense', and that B-theorists should therefore reject Redundancy.[34] However, accepting the truth of sentences like (9) might be considered a small price to pay for a simple and elegant means of avoiding the contradiction generated by Locator, Sometimes and (6). In short, Redundancy is a strong contender for the best B-theoretic solution to the Locator Puzzle.

Let us now return to the Triviality Argument. As we saw above, according to premise (3) of the argument, (P1)

> (P1) Everything that exists now is present

is trivial in the sense of being true no matter what theory of time one holds—including the B-theory. Now, (P1) plausibly has the following logical form:

> (10) $\forall x(\text{N}(\exists y\, y = x) \supset \text{Present}(x))$

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[31] In particular, it would be natural for B-theorists to consider defending a temporal analogue of Bricker's (2001) 'island-universe friendly' analysis of the modal operators, on which 'Sφ' means something like 'restricting attention to things located at some interval of time i, φ'.

[32] Unfortunately, space does not permit an assessment of the different strategies here. See Marshall (2016) for relevant discussion.

[33] The modal analogue of Redundancy is defended by Dorr (*Counterparts* MS), Divers (2002, 2014), and Noonan (2014).

[34] Marshall (2016) raises something like this objection against the modal analogue of Redundancy.

Given Locator and the natural B-theoretic interpretation of 'is present' as expressing (when unembedded) the property of *being located at this instant*, (10) is equivalent to

(11) $\forall x(\text{Located}(x, now) \supset \text{Located}(x, now))$

(Informally: Everything located at this instant is located at this instant)

This sentence is indeed trivial. However, *given Redundancy*, (P1) is equivalent *not* to (11), but to

(12) $\forall x(\exists y\, y = x \supset \text{Located}(x, now))$

(Informally: Everything is located at this instant)

And this sentence, unlike (11), is *false* given the B-theory, according to which there are many things—such as Xanthippe and the first President of Mars—which exist but are not located at this instant.

In sum: according to premise (3) of the Triviality Argument, (P1)—the sentence 'Everything that exists now is present'—is trivial in the sense of being true no matter which theory of time one holds, including the B-theory. However, we have seen that *if* B-theorists accept a very attractive solution to the Locator Puzzle—that is, the strategy of rejecting Locator in favour of Redundancy—then premise (3) is in fact false. The truth of premise (3), therefore, should not be taken for granted by Trivialists.

4 Presentism and temporal ontology

Finally, let us turn to premise (4) of the Triviality Argument, the claim that (P2)

(P2) Everything that did, does now, or will exist is present

is false by Presentist lights. Why think this? Here is Meyer (2012, p. 2):

> Let us therefore say that an object exists temporally if and only if it either has existed, does exist now, or will exist. With 'exists' read in this broader sense, the presentist thesis becomes:
> (P2) Nothing exists temporally that is not present.
> This thesis is non-trivial, but it is also clearly false. Here is a counterexample:
> (JC) Julius Caesar crossed the Rubicon.
> Because non-existent people cannot cross rivers, this claim can only be true if Caesar existed. But if Caesar did exist then he does exist temporally. And since he does not exist now, this means that there is an object, namely Caesar, that exists temporally without being present. Given that (JC) is true, the thesis (P2) is false.

Given Meyer's definition of 'exists temporally', his (P2) above is equivalent to our (P2). Similarly, here is Sakon (2015, p. 1090):

> (P2) For any x, if x *has existed*, *exists*, or *will exist*, x is present.
> (P2) is obviously false because there is an obvious counterexample. For instance, Socrates is not present but *has existed* previously.

Again, Sakon's (P2) is equivalent to our (P2).

How should Presentists respond to this argument? First, it is not at all obvious that Presentism is inconsistent with the view that e.g. Xanthippe is present. For example, consider the *Temporal Being Constraint* (TBC), the temporal analogue of Plantinga's (1983) 'serious actualism' and Williamson's (2013) 'being constraint':

TEMPORAL BEING CONSTRAINT: $A\forall x_1 \ldots A\forall x_n(Rx_1 \ldots x_n \supset \exists y(y = x_i))$ for $1 \leq i \leq n$

According to TBC, whenever an atomic predication is true of an individual, *there is something* that is that individual; informally, existence is a precondition for having properties or standing in relations. Presentists who *reject* TBC hold that sometimes, there are individuals who have properties or stand in relations but do not exist. For example, here is Salmon (1998, p. 290; my emphasis) on his proposal that the non-existent proposition that Socrates does not exist is both *true* and *has Socrates as a constituent*:

> Some may balk at my proposal on the grounds that it conflicts with the meta-physical principle that any object must exist in every conceivable circumstance in which that object has any properties. *This principle that existence is a pre-condition for having properties - that existence precedes suchness… is a confused and misguided prejudice.* Undoubtedly, existence is a prerequisite for a very wide range of ordinary properties… But the sweeping doctrine that existence universally precedes suchness has very clear counterexamples in which an object from one circumstance has properties in another circumstance in virtue of the prop-erties it has in the original circumstance. Socrates does not exist in my present circumstance, yet he has numerous properties here - for example, being mentioned and discussed by me.

A Presentist who followed Salmon in rejecting TBC could resist premise (4) of the Triviality Argument as follows: it is true according to Presentism that Xanthippe is present. But this is *not* false by Presentist lights. One might have thought so, on the grounds that Presentists must accept both of the following claims: (i) there is nothing that is Xanthippe; and (ii) if Xanthippe is present, she is something (which follows from TBC). However, it is consistent with Presentism that (ii)—and therefore TBC—is false: that is, that Xanthippe is present but is *not* something.

Presentists who reject TBC and argue as above face two obvious objections. The first is that it is simply false that Xanthippe—who died over two thousand years ago—is *present*: if she is anything at all, she is (merely) *past*. The second is that it is very hard to believe that there could be exceptions to TBC.[35] In particular, a Presentist who claimed that Xanthippe is present but not something would face the accusation that they had failed to grasp what it means for there to be *nothing* that is Xanthippe. As an example of this sort of response, here is Williamson (2013, p. 156) on the combination

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[35] Most Presentists accept TBC. For example, Crisp (2005)—a Presentist—describes alleged counterex-amples to TBC as 'bizarre'. Indeed, some authors have argued that Presentism *implies* TBC—see e.g. Bergman (1999). However, others have disputed this, and drawn attention to the advantages for Presentism of rejecting TBC—see e.g. Inman (2012).

of *Contingentism* (the thesis that there could be contingent things, or more formally that $\Diamond \exists x \Diamond \neg \exists y\, y = x$) and a rejection of the *Modal Being Constraint*:

> Without it [the Modal Being Constraint], contingentism looks ambivalent: the supposed counterexamples to the being constraint are pictured as casting enough of a modal shadow on circumstances from which they are absent to bear properties and relations without being present themselves. Although such spatial pictures are easily imaginable in themselves, they betray the contingentist when applied to the being constraint, since they represent the supposed counterexamples to it as merely elsewhere, within range of an unrestricted quantifier and therefore something in the relevant sense, and merely out of range of a quantifier restricted to local things. They give comfort only to those who have failed to grasp how radical is the nothingness required of counterexamples to the being constraint.

We have seen that Presentists who reject TBC can resist premise (4) of the Triviality Argument, although not without some difficulty. An alternative approach is to retain TBC and instead accept *Permanentism*[36]:

PERMANENTISM: $A\forall x A \exists y\, y = x$
(Informally: always, everything is always something)

According to Permanentism, it is always the case that everything exists eternally—and therefore there is no change over time in what there is. It follows that e.g. given that there *was* something that is Xanthippe, there *is*—and *always will be*—something that is Xanthippe. However, it does *not* follow that Xanthippe is still a human being or even spatially located—Permanentism is silent on Xanthippe's current qualitative nature. More generally, Permanentism is consistent with *Qualitative Temporalism*, the view that there are *temporary properties*:

QUALITATIVE TEMPORALISM: $\exists x \exists F (SFx \land S\neg Fx)$
(Informally: something is sometimes some way and sometimes not that way)

A Permanentist Presentist could resist premise (4) of the Triviality Argument as follows: it is true according to Presentism that everything that did, does now, or will exist is present, and therefore that e.g. Xanthippe is present. But this is *not* false by Presentist lights. One might have thought so, on the grounds that Presentists must accept both of the following claims: (i) there is nothing that is Xanthippe; and (ii) if Xanthippe is present, she is something (which follows from TBC). However, it is consistent with Presentism that Permanentism is true and therefore (i) is false: that is, that Xanthippe is something.

Again, this sort of Presentist faces the objection that it is simply false that Xanthippe is *present*. However, Permanentist Presentists have a response to this objection: they will naturally hold that *many fundamental properties*—such as having mass, charge,

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[36] Permanentism is the temporal analogue of *Necessitism*, the thesis that necessarily, everything is necessarily something (formally: $\Box\forall x \Box \exists y\, y = x$). The names 'Permanentism' and 'Necessitism' are due to Williamson (2013), who defends the conjunction of Necessitism and *Propositional Contingentism* (the view that there are propositions that are true [false] but could be false [true]).

and a spatiotemporal location—are temporary (which implies Qualitative Temporalism). Given this view, they can argue that although Xanthippe is now something, she has changed in all sorts of important ways—in particular, she no longer has mass or a spatial location. And if they follow Cameron (2016) in holding that to be *present* is just to be *located at the present instant if any*, they can argue that there is a very natural sense in which Xanthippe is present: she is *not* located at a past or future instant.

The question is: can Presentists be Permanentists? It is natural to think that both *Transientism*

> TRANSIENTISM: $S\exists xP\neg\exists yy = x \land S\exists xF\neg\exists yy = x$
> (*Informally: As time passes, some things begin to be, and some things cease to be*)

and Qualitative Temporalism are *essential* Presentists theses – in other words, that Presentism implies change in both *what there is* and *how things are*. However, some authors have argued that Presentism carries no implications concerning *ontological* change over time. In particular, Cameron (2016) argues that what is essential to Presentism is just that there is nothing located at a past or future instant. If Cameron is right, then Presentism is after all consistent with Permanentism. Unfortunately, space does not permit a full discussion of Cameron's arguments here. However, it is clear that *if* Presentism is consistent with Permanentism, Presentist Pernanentists have a strong case against premise (4) of the Triviality Argument.

We have seen that Presentists who reject either TBC or Transientism can resist premise (4) of the Triviality Argument, on the grounds that e.g. Xanthippe's being present is in fact consistent with Presentism. However, there is a much simpler Presentist response to premise (4) due to Crisp (2004), which does not require any deviation from the 'standard' Presentist package of TBC and Transientism. The response is as follows: (P2) is naturally formalized as

(1) $\forall x((P\exists yy = x \lor N\exists yy = x \lor F \exists yy = x) \supset \text{Present}(x))$

(1) implies that Xanthippe is present only if one also accepts:

(2) $\exists xx = \text{Xanthippe}$

But Transientist Presentists *reject* (2)—rather, they hold that *there was* something that is Xanthippe, but it is not the case that there is something that is Xanthippe[37]:

(3) $P(\exists xx = \text{Xanthippe}) \land \neg\exists xx = \text{Xanthippe}$

And it does not follow from (1) and (3) that Xanthippe is present. More generally, it is false that (P2) has implications that Transientist Presentists would reject. (It is no surprise that (P2) is consistent with Transientist Presentism: as we saw in Sect. 2, given that if everything is F then everything that is G is F, Presentism as standardly defined *implies* (P2).)

How can Trivialists respond to Crisp's simple logical point? One obvious response is as follows[38]: the initial quantifier in (1) above is intended to be read as equivalent to

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[37] For the purposes of this discussion I ignore the problem for Transientist Presentists of accounting for the truth of sentences featuring expressions such as 'Xanthippe' which apparently refer directly to non-present entities. See Markosian (2004) for discussion.

[38] This is essentially Ludlow's (2004) reply to Crisp (2004).

the tenseless expression 'everything that <u>exists</u>'. But that reading is not available: as Stoneham (2009) points out, given Tenseless Properties and the fact that the semantics of the quantifiers is given in natural language English, the initial quantifier in (1) must be read as equivalent to 'everything that did, does now, or will exist'. But if the initial quantifier in (1) is read as equivalent to 'everything that did, does now, or will exist' then given Transientist Presentism, (1) *does* imply that Xanthippe is present, because it is true according to Transientist Presentism that *there was something* that was Xanthippe.

However, this response does very little to help the Trivialist. For one thing, as we saw above, there is no good reason for Presentists to accept Tenseless Verbs, and it is clear that the semantics of the quantifiers can be given in natural languages other than English—including languages such as Mandarin Chinese for which the relevant analogue of Tenseless Verbs is plausibly false. (As we saw above, Stoneham could respond to this point by defending the stronger thesis that it is impossible to express 'tenseless' properties in *any* natural language. But as we have seen, Presentists also have no good reason to accept this thesis, and some good reasons to reject it.) But suppose Stoneham is right that the initial quantifier in (1) must be read as equivalent to 'everything that did, does now, or will exist'. Given this reading, (1) is equivalent to:

(4) $\forall x((P\exists yy = x \vee N\exists yy = x \vee F\exists yy = x) \supset ((P\exists yy = x \vee N\exists yy = x \vee F\exists yy = x) \supset \text{Present}(x)))$
(*Informally: Anything that did, does now, or will exist is such that if it did, does now, or will exist, it is present*)

And as with (1) above, (4) implies that e.g. Xanthippe is present given Transientist Presentism *only if* Transientist Presentists also accept (2)—which they do not.

Tallant (2014, p. 481) defends a similar Trivialist response to that just described. According to Tallant, given Tensed Verbs, Presentists must understand (2) above as equivalent to either

(5) $\exists_n xx = \text{Xanthippe}$

or

(6) $\exists_t xx = \text{Xanthippe}$

where '$\exists_n x$' means 'for some x that exists now' and '$\exists_t x$' means 'for some x that did, does now, or will exist'.[39] Tallant then argues that Presentists must reject (5)— the claim that there is *now* something that is Xanthippe—on the grounds that given (standard) Presentism, if something exists now then it is present and Xanthippe is not present. It follows that Presentists must treat (2) as equivalent to (6). But in that case, Tallant concludes, Presentists must accept (2) after all, as it is true according to Presentism that some x that *did exist* is Xanthippe.

It should be clear that Tallant's response suffers from the same problem as the previous response: if '$\exists_t x$' means 'for some x that did, does now, or will exist', (6) is equivalent to

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[39] Tallant (2014, p. 481) writes: "$\exists_t$ x (x)' is true iff x either has existed, does exist or will exist'.

(7) $\exists x (\text{P}\exists y\, y = x \vee \text{N}\exists y\, y = x \vee \text{F}\exists y\, y = x) \wedge x=\text{Xanthippe}$
(*Informally: There is something that did, does now, or will exist that is Xanthippe*)

But Transientist Presentists reject (7)—they hold that

(8) $\neg \exists x\, x=\text{Xanthippe}$

Therefore *even if* Presentists had to treat (2) as equivalent to (6)—which they do not, given that they can reject Tensed Verbs—they would not thereby be forced to accept (2).

Of course, a Trivialist could reply to the above as follows: given Tenseless Properties and the fact that the semantics of the quantifiers is given in natural language English, the quantifier in (8) must be *tensed*; and if it is tensed, (8) is in fact *false* given Transientist Presentism, as Transientist Presentists accept that something that *did exist* is Xanthippe. It should be clear that this dialectic between the Trivialist and Transientist Presentist could in principle continue indefinitely, with the Transientist Presentist responding by reasserting the non-existence of Xanthippe and the Trivialist reapplying Tenseless Properties to the Transientist Presentist's assertion. On these grounds, the Trivialist might even argue in the spirit of McTaggart (1908) that she has caught the Transientist Presentist in a 'vicious infinite regress', such that the Transientist Presentist can 'never escape' the conclusion that Xanthippe is present.

Transientist Presentists have no more to fear from the Trivialist's 'vicious infinite regress' than A-theorists have from McTaggart's (in)famous argument.[40] The Trivialist responses to Crisp's simple logical point described above all involve the same error: they try to use Tenseless Properties to show that Transientist Presentists must accept the existence of non-present entities such as Xanthippe. But as we have seen, Transientist Presentists can easily resist these sorts of arguments by simply rejecting the existence of the relevant entities—in short, *by being Transientists*. The fact that Trivialists can in principle make this mistake *repeatedly* does nothing to undermine the Transientist Presentist's position.[41]

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[40] See Deasy (2015) for a number of A-theoretic responses to McTaggart's argument.

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